

# W5YI

Nation's Oldest Ham Radio Newsletter

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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## The Future of Amateur and Commercial Radiotelegraphy

With the phasing out of radiotelegraphy on the high seas, can amateur radio be far behind? The London-based International Maritime Organization was formed in 1959. One of its primary goals is to enhance safety of large ships at sea through improved radiocommunication technology. IMO membership consists of representatives from the various countries that control nearly all world's ocean-going vessels.

The 1960 and 1974 SOLAS (Safety of Life at Sea) Conventions prescribed that all passenger ships and cargo ships of more than 1,600 gross tonnage be equipped with radiotelegraph equipment and qualified operators.

In 1972, the IMO began a study of satellite communications. It resulted in 1979 with the formation of the International Maritime Satellite (INMARSAT) organization which is also based in London. Shipping companies now had a way of international communications through four geostationary satellites. Except for the extreme north and south polar regions, together they cover nearly all of the earth's surface. Besides automatic distress alerting and the transmission of maritime safety information, INMARSAT provides high quality voice, telex, data and fax communications to and from suitably equipped vessels.

The 1979 SAR Convention (International Convention on Maritime Search and Rescue) invited the IMO to develop a global maritime distress and safety system (GMDSS) which included high-tech

telecommunications.

Working with other worldwide organizations, IMO then developed and tested what was to become the various GMDSS equipment and procedures. The ITU (the worldwide United Nations organization governing telecommunications) established the regulatory framework. The 1983, 1987 and 1992 World Administrative Radio Conferences approved amendments to the ITU Radio Regulations providing frequencies, operating procedures and radio personnel for the GMDSS.

On November 9, 1988, at the conclusion of a two week London conference, the IMO notified the world that GMDSS had been given the go-ahead by world shipping leaders. It would eventually spell the end of Morse code at sea. A statement issued afterward called the decision, "...one of the biggest advances in maritime communications since the introduction of radio."

### Old maritime communications

Up until the adoption of GMDSS, maritime communications for large ocean-going vessels required that a radio officer keep watch on international distress frequencies. Ships had to carry radio equipment capable of transmitting over minimum specified distances. Any vessel receiving a distress signal would proceed as quickly as possible to assist the vessel in trouble. This distress communications plan was primarily intended for ship-to-ship rather than ship-to-shore operation.



The old system also required all passenger ships and large cargo ships to be able to monitor Morse telegraphy on 500 kHz. That meant that a Morse qualified radio officer had to be on board. In addition, a radiotelephone system on 2182 kHz and 156.8 MHz provided for common distress communications. The ITU regulations also required radioamateurs to be Morse code proficient since it was believed that HF radiotelegraphy was very beneficial in emergency situations.

## **New maritime communications**

Comparing GMDSS maritime communications to manual Morse telegraphy is like comparing a space ship to a bicycle. There simply is no comparison.

GMDSS radio equipment is considered in terms of communications range ...or "sea areas" as they are called. There are four different GMDSS radio equipment carriage requirements for ships at sea. Basically, these are (1) direct VHF, (2) direct MF, (3) satellite and (4) HF equipment for areas that cannot be covered by the first three modes.

### Sea Area A1

is within the VHF radiotelephone coverage of a coast station which has continuous DSC (digital selective calling) alerting available.

### Sea Area A2

is within the communications coverage area of a shore-based MF (medium frequency) coast station operating in the 2-3 MHz band which has continuous DSC alerting available. Excludes sea area A1.

### Sea Area A3

is within the coverage of a INMARSAT geostationary satellite in which continuous alerting is available. Excludes sea area A1 and A2. The INMARSAT satellite system covers nearly the entire earth's surface.

### Sea Area A4

is the remaining sea areas excluding A1, A2 and A3. These areas are in the extreme Arctic and Antarctic.

A time-table was established by the IMO for phasing in GMDSS ...and phasing out manual telegraphy. The GMDSS regulations apply to all ships over 300 gross tons and all passenger ships. Last year, all large vessels were required to carry automatic radio beacons that can be received by satellite and a NAV-TEX receiver.

And after 70 years of continuous monitoring, the U.S. Coast Guard has now discontinued watch on 500 kHz, long considered the primary frequency for distress alerting! The USCG transmitted its last CW message on July 31, 1993. The advent of satellite and

digital technology have now made Morse code obsolete on the high seas.

All new ships constructed after February 1, 1995, must comply with all GMDSS equipment and personnel requirements. Older vessels have until February 1, 1999, to conform.

## **Automatic distress alerting**

On August 1, 1993, the carriage of float-free or portable satellite beacons operating on 406 MHz (and to a lesser extent on 121.5 MHz) became mandatory for all ships of 300 tons and over. These automatic shipboard beacons (called EPIRBs, an acronym for emergency position-indicating radio beacons) are monitored by low-altitude (600 mile high) orbiting satellites. Airborne EPIRBs are called ELTs (emergency locator transmitters). The land version are PLBs (personal locator beacons.)

EPIRBs send a short 5-watt burst of RF energy every 50 seconds to one of the orbiting COSPAS-SARSAT satellites, an international space system for search of distress transmissions. An on-board satellite repeater downlinks the data on 1544.5 MHz in real time. The information is also simultaneously stored for later retrieval.

This digitally-coded information, which is received by a network of ground stations, includes the identity of the ship (or aircraft), the country of origin, time of position, and the nature of the distress. An option allows the ship's position to also be automatically up-linked from on-board navigational equipment. The low satellite altitude and (VHF/UHF) frequencies offer optimum (Doppler shift) location information, low up-link power requirements and short intervals between passes

The COSPAS-SARSAT network, originally developed by Canada, France, Russia and the United States, has now been joined by many nations. There are two (Russian) COSPAS and two (United States) SARSAT satellites in orbit. SARSAT, by the way, stands for search and rescue satellite aided tracking.

## **Digital selective calling**

DSC, automatic digital selective calling, is an important part of the GMDSS. Frequency shift keying employing a ten-bit error-correcting code is used to directly transmit distress and other information back and forth between ships and coast stations.

The emission may be phase or frequency modulated ...or audio modulated SSB. All ships within receiving range of a coast station can receive the transmission but only the specified ship can respond.

The data is transmitted on special MF, HF and VHF frequencies designated for maritime DSC channels. Ship and coast stations maintain watch on DSC



frequencies in much the same fashion as was previously performed by radiotelephone and radiotelegraph operators.

## Search and rescue radar transponders

SARTs (search and rescue transponders) are the primary GMDSS means for locating ships in distress or their survival craft. The portable or float-free SART operates in the 9 GHz band and responds to ordinary 9 GHz ship or airborne radar. They can either be activated manually or automatically when placed in water. Once switched on, a SART will only transmit signals when interrogated by an external marine or aircraft radar.

The SART also notifies persons in distress by an audible tone or small light that a rescue ship or aircraft is nearby ...within five miles. A battery provides about 96 hours of SART stand-by service.

SARTs show up as a distinctive line of blips on a radar screen of a rescue vessel or aircraft. The dotted lines change to a concentric circle once the rescue craft approaches to within one mile.

## Maritime safety information system

MSI (maritime safety information) is transmitted to ships at sea over the NAVTEX system and the INMARSAT SafetyNET. NAVTEX is an international English language direct printing telex service used to distribute navigational and weather warnings. A single frequency (518 kHz) is used worldwide. Its range is about 400 miles offshore.

## Radio operator requirements

Morse code will continue to be required on older ships constructed prior to February 1, 1995. Four years later, however, even these ships must carry full GMDSS equipment. At that point, the one hundred year reign of Morse code as the foundation of maritime distress and safety messages goes the way of the horse and buggy.

All GMDSS equipped ships must carry at least two FCC-licensed GMDSS Radio Operators. This license allows routine adjustments but not maintenance. One of the operators is designated as having primary distress communications responsibility. To qualify as a **GMDSS Radio Operator**, an applicant must pass Commercial Radio Examination Element 1 (Marine radio law) and Element 7 (GMDSS radio operation) - a total of 100 multiple choice questions..

Ships may elect to conduct equipment repair and maintenance at sea, in which case an FCC-licensed GMDSS Radio Maintainer must be on board. Shipboard licensed technicians are not required, however, when shore-based maintenance is available and/or when standby replacement equipment can be

switched out at sea.

The examination requirements for the **GMDSS Radio Maintainer** license are passing Element 1 (radio law), Element 3 (electronics) and Element 9 (GMDSS maintenance.) There are 24 multiple-choice questions in Element 1 and 9; 76 in Element 3 and 7. Passing mark is 75% answered correctly.

Examinations for commercial radio operator licenses - including GMDSS - are now administered by private organizations in much the same manner as amateur examinations. Call 1-800-669-9594 for the test site nearest you - or to obtain the needed study material. All question pools - including the word-for-word multiple choices and answers are now available and widely published.

## What about the commercial radiotelegraph licenses?

They will still be available - and needed - for at least another four years. The FCC field offices no longer administer any amateur or commercial radio operator examinations whatsoever. A COLEM (commercial operator license examination manager) is the commercial counterpart of the VEC (volunteer-examiner coordinator.) There are 18 different amateur and 9 different commercial radio testing organizations. The W5YI Group, Inc., is the only one, however, that is both a VEC and a COLEM.

On July 21st, the FCC released the final two commercial radio operator question pools to the public. (We received them on July 30th.) Element 5 covers basic radiotelegraph; Element 6, advanced radiotelegraph. These questions, multiple choices and answers are now in the process of being incorporated into a single booklet which will be available September 1st from the W5YI Group. (Credit card orders: 1-800-669-9594.) There are 284 possible questions in Element 5 ...and 609 in Element 6.

To become a **Third Class Radiotelegraph Operator** you need to pass written Elements 1 and 5 plus telegraphy Elements 1 (16 words-per-minute "CG" - code groups) and telegraphy Element 2 (20 wpm "PL" - plain language.)

You must additionally also pass Element 6 to obtain the **Second Class Radiotelegraph Operator** ticket. And you need to be able to transcribe Morse code groups at 20 wpm and text at 25 wpm to qualify for the **First Class Radiotelegraph Operator** certificate.

Unlike amateur radio Morse code testing, there is only one way to pass a commercial radiotelegraph examination. Examinees are required to transcribe the transmitted test message correctly by ear for a period of one minute without error.

The good news for Amateur Extra Class operators is that they obtain credit for commercial telegraphy examination Elements 1 (16 wpm CG) and 2



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(20 wpm PL) without examination. Applicants for the Second or Third Class Radiotelegraph Operator certificate need only attach a photocopy of their Amateur Extra Class ham ticket to obtain credit for these elements.

Applicants for commercial radiotelegraph licenses may not, however, just pass the 20 words-per-minute Amateur examination Element 1(C). Examinees must actually hold an Extra Class ham ticket to get obtain examination credit for commercial telegraph Element 1 and 2.

### The impact of GMDSS on amateur radio

The international radio rules require amateur radio operators to Morse proficient when their operation takes place in the medium and high frequency bands. Prior to 1959, ham operators had to know CW if they operated on any amateur band below 1000 MHz (1 GHz.). This level was dropped to 144 MHz at WARC-59. A further reduction was made at WARC-79 to its present 30 MHz. World Administrative Radio Conferences are where the various ITU nations meet to agree on telecommunications standards.

Now that manual telegraphy is being phased out in the commercial radio sector, the question is should Morse code knowledge remain a requirement for amateur radio. Many amateurs (and professionals) do not think so. The computer and satellite have totally revolutionized communications, especially during the last decade or two. There are simply more reliable, accurate and efficient wireless communications modes available today.

An amateur group out of New Zealand is already spearheading a major effort to amend the International Radio Regulations. They are proposing to modify RR-2735, a part of Article 32, which regulates the Amateur and Amateur-Satellite Service. Rather than work with national amateur radio societies, however, they are going directly to the international regulators.

Radio Regulation 2735 currently reads: *"Any person seeking a license to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30 MHz."*

They want to change the wording to read, *"Administrations may take such measures as they judge necessary to verify the proficiency in the use of Morse code of any person wishing to operate the apparatus of an amateur station."* The key word is "may" rather than the current "shall."

The group is deadly serious. The *Organization Requesting Alternatives By Code-Less Examinations*,

*Inc.*, (ORACLE is their informal name) have already formed a corporation and have written their constitution. Their sole objective is to lobby nationally and internationally in opposition to Morse code proficiency as a mandatory component in the examination process for amateur radio licenses.

The group is administered by six New Zealand managers. They may be reached at: ORACLE, Inc., 90 Campbell St., Karon, Wellington, New Zealand, ATTN: Bob Vernall, ZL2CA. (His Internet address is: vernall@corp.telecom.co.nz) They are particularly interested in reaching amateurs in various countries who also feel the amateur service telegraphy requirement is outdated.

ORACLE believes that amateur radio uses a wide range of communications modes and it is illogical to focus on just one of them. Here is a couple of paragraphs from their by-laws:

"Choice of mode of transmission in the amateur service is basically interest driven. Individual operators are the deciding parties rather than any regulatory direction. Actual use of Morse code as a percentage of amateur radio contacts is generally decreasing with time, as interests diversify. SSB voice operation, using English language, is now the most common mode for international amateur communication. These factors suggest that there is no need to have mode-specific qualification requirements when so many modes are available."

"It is inconsistent that Morse code is the only single element in the amateur examination syllabus that places a pass/fail outcome on obtaining a license for operation in certain bands. Most of the other radio services have greatly reduced emphasis on Morse code, none being more obvious than in the maritime service with general conversion to GMDSS by 1999."

ORACLE also believes that the main intention today of the telegraphy requirement is to limit access to amateur bands below 30 MHz.

The next two *World Radiocommunication Conferences* (WRC's) are scheduled for 1995 and 1997. (They are no longer called *World Administrative Radio Conferences* or WARC's.) ORACLE's plan is to present arguments for abolishing the mandatory Amateur Service telegraphy proficiency requirement to the VGE. The *Voluntary Group of Experts* is not part of any delegation ...instead being an ITU advisory committee with no power to make decisions. Simplification of the International Radio Regulations is a known key topic at both the WRC-95 and WRC-97.

The FCC has also formed a new sixth Working Group (WG-6) to the WRC-95 *Industry Advisory Committee*. They are charged with making agenda recommendations for WRC-97.



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## FCC REORGANIZES ITS STAFF

On August 1st, FCC Chairman Reed E. Hundt announced massive organizational changes at the Federal Communications Commission. Created were a new Wireless Telecommunications Bureau, a new International Bureau, a new Office of Workplace Diversity and a new Competition Division in the Office of General Counsel. The Office of Small Business Activities was also moved out of the Office of Managing Director and it will report directly to the Commission.

The FCC will now operate with six bureaus. The other four are the Common Carrier Bureau, Mass Media Bureau, Field Operations Bureau and the Cable Services Bureau. The Private Radio Bureau (PRB) was discontinued - at least in name - and absorbed into the new Wireless Telecommunications Bureau which will license and administer all personal communications service-related technologies. The International Bureau will concentrate on global satellite and treaty-related issues.

The FCC shakeup is part of "reinventing government," a pet project of Vice President Al Gore. Mary Beth Richards, an 11-year FCC veteran, for the past six months has been serving as "Special Counsel to the Commission for Reinventing Government."

The changes were first announced in a 10:30 a.m. meeting, Monday, August 1st to stunned FCC employees assembled in the Commission hearing room. That meeting was also broadcast over the Commission's internal television system.

"The two biggest organizational changes we propose today are the creation of a Wireless Telecommunications Bureau and an International Bureau," Hundt said. "My initial sense that a Wireless Bureau was necessary was confirmed by last week's phenomenally successful spectrum auctions. A Bureau dedicated to the mission of wireless services will ensure that we remain on track with the licensing of PCS and with other emerging technologies. In addition, the issues facing the communications industry are almost never without international implications. Our International Bureau will better meet the challenges ahead as the FCC continues its role in international telecommunications, working with the Department of State and NTIA in the promotion of the Global Information Infrastructure."

Hundt also noted that many of the organization changes are the result of suggestions from employees made directly to the Chairman or to Mary Beth Richards. This includes, for example, the Office of Workplace Diversity, which will report directly to the Chairman and other Commissioners and will handle the Commission's internal EEO program.

"It is a very exciting time to be at the Commis-

sion," Hundt added. "The work we do is vital to American businesses, consumers and even to school children. It is my hope that the organizational changes we announce today will help us meet our goal of serving these customers with efficiency and excellence, in the public interest."

Chairman Hundt announced the Commission's intention to make the following appointments as part of the agency's reorganization plan.

**Regina Keeney**, is the new Chief of the new **Wireless Telecommunications Bureau**. She currently is the minority counsel for the Senate Committee on Commerce, Science and Transportation. This new bureau, which basically replaces the Private Radio Bureau, includes the Domestic Radio Branch, Land Mobile and Microwave Branch, the Licensing Division, Mobile Services Division and the Special Services Division. It is still not clear if there will be additional organizational changes.

Private Radio Bureau Chief **Ralph A. Haller (N4RH)** and **Gerald P. Vaughan** both become Deputy Chiefs in the new Wireless Telecommunications Bureau.

**Scott Blake Harris** heads up the new **International Bureau**. He is currently the Chief of the Office of International Communications.

**Thomas P. Stanley**, was reassigned from being Chief Engineer from the Office of Engineering and Technology to the **Office of Plans and Policy**.

**Richard M. Smith** becomes the Chief of Engineering and Technology. He currently heads the Field Operations Bureau, a more visible position.

**Beverly Baker** becomes the new **Chief of the Field Operations Bureau**. Previously she was Deputy Chief, Private Radio Bureau.

The eyebrow-raising reorganization will become effective once formal Commission, Congressional and Union approval has been obtained.

## COMMISSIONER TAKES ISSUE WITH CHANGES

To say the least, Commissioner James H. Quello didn't seem to be too happy with the personnel changes made by fellow Democrat Reed Hundt. He issued a separate statement. "...several new staffing positions have caused me some concern," he said.

He called Regina Keeney "...superbly qualified" to be a bureau chief. "It is ironic, however, that her appointment inadvertently foreclosed advancement for an exceptionally dedicated, effective current bureau chief of the Private Radio Bureau." [Ralph Haller]

"Most of the bureau chiefs and deputies I have worked with over the years and hold in highest esteem



and that certainly includes Beverly Baker. However, I believe some of the shifts being made are troublesome at best."

"For starters, I am concerned about the decision to move the incumbent Chief of the Field Operations Bureau [Richard Smith] to head the Office of Engineering and Technology. FOB is not only the eyes and ears of the Commission, it is also the FCC's face to a substantial part of the public. In my judgement, FOB has performed its critically important functions magnificently during the last decade, particularly at a time when our dire budgetary situation was so bad that our field installations often lacked enough money to buy gas for our vehicles, to say nothing of the equipment necessary to do the type of job we all would have wished."

"Notwithstanding these limitations, which other executives might have found disabling, under Dick Smith, the Bureau not only did its job, but did its job with resourceful expertise. I therefore find it perplexing that just as the Bureau is beginning to enjoy the benefits of increased funding - which Mr. Smith, I might add, was quite instrumental in helping to obtain - he is being shifted from a Bureau that has performed so superbly and in which he has spent his entire FCC career."

"I have similar concerns about the reassignment of the incumbent Chief of the Office of Engineering and Technology to a position within the Office of Plans and Policy. Dr. Tom Stanley has been outstanding in his service to several Chairmen, including this one, and I personally have been grateful for the ability not only to rely on his candor but also on his remarkable skill in making even the most complex technical proposition understanding to a non-engineer. We are all indebted to him for his contributions to the development of HDTV and PCS, which would not have developed as successfully without his leadership."

"The mention of PCS raises another change that is to me the most ironic of all - that relegating the incumbent Chief of the Private Radio Bureau to a job as co-deputy in a new Wireless Telecommunications Bureau. Ralph Haller has nothing but my full admiration and thanks for his exhaustive efforts as Chief of the consolidated FCC PCS Task Force in initiating and fine-tuning the rules governing not only the new PCS but also, incredibly, writing the intricate rules governing our highly successful new spectrum auctions. During the course of the past year, Mr. Haller, who has served as Bureau Chief under four Chairmen, not only played a major part in the inauguration of a new multibillion-dollar PCS industry [but] also played a major role in designing auctions which netted over \$800 million. One wonders what more he could have done to have retained his job or merit promotion."

Quello said he was concerned over the futures of seasoned career staffers deserving of advancement who will not find it. I'm afraid we will lose some of them. They are losses that, even with increased funds for more hiring, this Commission can ill afford to take." Commissioner Quello said he "...would not have disrupted parts of the All-Star teams on which they now perform."

## Field Operations Bureau Activities - Week of July 24th

**EIC CONFERENCE:** The Engineers-in-Charge (EIC) of the 15 field offices met this week in Washington, DC., to discuss a wide range of operational and policy matters. This was the first such conference since 1984. Because of the non-uniformity of problems throughout the country, field responses will become more customized to the needs of the area as determined by the local offices.

**FALSE SIGNAL FROM MILITARY BASE:** Last week, the Air Force Rescue Coordination Center at Langley Field, VA, contacted the FCC about a distress transmission from an emergency radio beacon. The *Search and Rescue Satellite Aided Tracking* (SARSAT) system had picked up an emergency beacon signal and indicated that it was coming from a location near Gettysburg, PA. FCC investigators, using mobile direction finding techniques and aided by Civil Air Patrol airplanes, tracked the signal to Fort Ritchie near Waynesboro, PA. The FCC found a faulty transmitter that was broadcasting a distress signal, and military authorities then shut the transmitter off. Transmissions such as these can mask real distress signals.

**RESTRICTED PERMIT:** The St. Paul, MN, office received a call from a very angry young man who claimed that his FCC radio license did not give him enough authority. He filed the FCC application, paid the fee, and now had a license that was useless. When questioned further, he indicated that he had a high-power stereo system in this car; and he enjoyed playing the unit at audio levels that would "crack the bones" of nearby pedestrians. After the first time police had charged him with disturbing the peace, he obtained the FCC license so he could play his high powered stereo. Unfortunately the police didn't see it his way. They were unimpressed with the FCC license, and again charged him with disturbing the peace as he went about "bone cracking."

**ABANDONED REPEATER:** A radio service company representing a limousine service called the FCC's Boston office to complain that their vehicle dispatching was being interfered with by a repeater station. Every time the control point and mobile units tried to talk via their repeater, their transmissions simultaneously



activated an unknown transmitter creating an annoying squeal in the complainant's receiver as the two signals clashed. Engineers from the Boston office using mobile direction-finding techniques tracked the interference to the John Hancock Building where a repeater station was found operating on the limousine frequency. The radio site manager explained that the licensee of the repeater had moved 10 years ago and had simply abandoned the repeater, leaving it on to repeat any transmission its receiver was tuned to. The abandoned repeater was disabled and the problem resolved.

**OUTSTANDING PUBLIC SERVICE:** Among others, FCC San Diego Office Engineer **Jerome V. Man, K9AAH**, was honored at a ceremony held at the FCC in Washington, DC, on June 27th. Jerry was awarded the FCC's 1994 "Catherine Forster Public Service Award" for saving the life of a person in distress. A man was sinking in a small vessel about 10 miles offshore and using sophisticated radio direction finding techniques, Jerry was able to guide the Coast Guard to the scene. The Public Service Award also honors Catherine Forster, a 20 year FCC employee who was slain while on duty at the FOB's New York Field Office in November 1991.

## H.R.-4522, FCC REAUTHORIZATION BILL

The FCC is not a permanent agency and its appropriations must be "reauthorized" every two years. H.R.-4522 seeks to do just that. The House Commerce Committee released the "current wording" of the *Federal Communications Commission Authorization Act of 1994* on July 15, 1994. We say "current", because it undoubtedly will change before it becomes law.

A copy of that bill was made available to us by Stephanie Vance, an extremely helpful legislative assistant in the office of Congressman Mike Kriedler (D-WA.)

Section 2 of the legislation seeks "Extension of Authority." There were two items of interest to amateur radio operators in the legislation. One concerns a change in the handling of "Vanity Call Signs" in the amateur service, the other more far reaching item involving "Licensing of Aviation, Maritime and Personal Radio Services by Rule."

### **VANITY CALL SIGNS**

The intention of Section 2, paragraph "d" is to change the \$7.00 annual Regulatory Fee for a Vanity Call sign to a one time Application Fee of \$150.00. Here is the wording that appears in H.R.-4522

#### **SEC. 2. (d) Vanity Call Signs**

##### **(1) LIFETIME LICENSE FEES -**

##### **(A) AMENDMENT - The schedule of application**

fees is section 8(g) of the Communications Act is further amended by adding, at the end of the portion under the heading, "Private Radio Services", the following new item:

"11. Amateur vanity call signs .....\$150.00"

(B) *TREATMENT OF RECEIPTS* - Moneys received from fees established under the amendment made by this subsection shall be deposited as an offsetting collection in, and credited to, the account providing appropriations to carry out the functions of the Commission. [In other words, the FCC retains the funds.]

##### **(2) TERMINATION OF ANNUAL REGULATORY FEES**

- The schedule of application fees in section 9(g) of the Communications Act of 1934 (47 U.S.C. 159(g)) is amended by striking the following item from the fees applicable to the private radio bureau:

"Amateur vanity call signs [annual fee].....\$7.00"

### **OPERATING WITHOUT A LICENSE**

The intention of Section 9 of H.R.-4522 is to make it legal for certain aircraft, maritime and personal radio stations to operate without an individual license. It is anybody's guess as to how far reaching this legislation can be. Which personal radio stations affected are not mentioned and it is assumed that any (or all of them) of them could be included.

The personal radio services include the Citizens Radio Service, General Mobile Radio Service, Amateur Radio Service, Radio-Control Service and the new Interactive Video and Data Service. IVDS allows 2-way communications through existing television sets. The service does not exist today and the best guess is that IVDS will permit home banking, on-demand catalogue shopping, interactive polling, learning from a distance and multiple player games. The frequencies for IVDS were auctioned off just a couple of weeks ago. Here is the wording as it appears in H.R.-4522.

#### **SEC. 9. LICENSING OF AVIATION, MARITIME, AND PERSONAL RADIO SERVICES BY RULE**

Section 307(e) of the Communications Act of 1934 (47 U.S.C. 307(e)) is amended to read as follows:

"(e)(1) Notwithstanding any license requirement established in this Act, the Commission may by rule authorize the operation of radio stations without individual licenses in the following radio services: (A) the personal radio services; (B) the aviation radio service for aircraft stations operated on domestic flights when such aircraft are not otherwise required to carry a radio station, and (C) the maritime radio service for ship stations navigated on domestic voyages when such ships are not otherwise required to carry a radio station, if the Commission determines that such authorization serves the public interest, convenience, and necessity.



"(2) Any radio station operator who is allowed by the Commission to operate without an individual license shall comply with all other provisions of this Act and with rules prescribed by the Commission under this Act.

"(3) For purposes of this subsection, the terms 'personal radio services', 'aircraft station', and 'ship station' shall have the meanings given them by the Commission by rule."

## HOUSE JOINT RESOLUTION SUPPORTS HAM RADIO

On July 15th, American Radio Relay League President George S. Wilson III, W4OYI, wrote a letter to Congressman Mike Kriedler (Representative, Washington state) thanking him for his efforts on House Joint Resolution 199 and for incorporating changes in the amateur "Vanity Call Sign" proposal into H.R. 4522.

HJ Res-199 seeks to recognize the important role of the Amateur Radio Service when a natural disasters strike. Stephanie Vance has been instrumental in compiling a list of Congressmen who have supported this resolution. There are currently nearly 250 sponsors of the resolution which reads:

**\*JOINT RESOLUTION** - To recognize the achievements of radio amateurs, and to establish support for such amateurs as national policy.

**WHEREAS** Congress has expressed its determination in section 1 of the *Communications Act of 1934* (47 U.S.C. 151) to promote safety of life and property through the use of radio communications;

**WHEREAS** Congress, in section 7 of the *Communications Act of 1934* (47 U.S.C. 157), established a policy to encourage the provision of new technologies and services;

**WHEREAS** Congress, in section 3 of the *Communications Act of 1934*, defined radio stations to include amateur stations operated by persons interested in radio technique without pecuniary interest;

**WHEREAS** the Federal Communications Commission has created an effective regulatory framework through which the amateur radio service has been able to achieve the goals of the service;

**WHEREAS** these regulations, set forth in part 97 of title 47 of the Code of Federal Regulations clarify and extend the purposes of the Amateur Radio Service as a:

- (1) voluntary noncommercial communication service particularly with respect to providing emergency communications;
- (2) contributing service to the advancement of the telecommunications infrastructure;
- (3) service which encourages improvement of an individual's technical and operating skills;
- (4) service providing a national reservoir of trained operators, technicians and electronics experts, and
- (5) service enhancing international good will;

**WHEREAS** Congress finds that the amateur radio service has made a contribution to our Nation's communications by its crafting, in 1961, of the first Earth satellite licensed by the Federal Communications Commission, by its proof-of-

concept for search and rescue satellites, by its continued exploration of the low Earth orbit in particular pointing the way to commercial use thereof in the 1990's, by its pioneering of communications using reflections from meteor trails, a technique now use for certain government and commercial communications, and by its leading role in development of low-cost, practical data transmission by radio which increasingly is being put to extensive use in, for instance, the land mobile service:

**NOW THEREFORE BE IT RESOLVED** by the Senate and House of Representatives of the United States of America in Congress assembled,

## **SEC. 1. FINDINGS AND DECLARATION OF CONGRESS**

Congress finds and declares that --

- (1) radio amateurs are hereby commended for their contributions to technical progress in electronics, and for their emergency radio communications in times of disaster;
- (2) the Federal Communications Commission is urged to continue and enhance the development of the amateur radio service as a public benefit by adopting rules and regulations which encourage the use of new technologies within the amateur radio service; and
- (3) reasonable accommodation should be made for the effective operation of amateur radio from residences, private vehicles and public areas, and that regulation at all levels of government should facilitate and encourage amateur radio operation as a public benefit.

## JULY FIREWORKS BREAK AMATEUR TV RECORDS

Throughout the weekend of July 9th and 10th, the Pacific high pressure system began to build up between California and Hawaii, triggering one of the strongest tropospheric ducting band openings ever recorded between Hawaii and the mainland.

The first fast-scan 434 MHz ATV reception over this 2509 path was accomplished between KH6HME, Paul Lieb, and Gordon West, WB6NOA, in Costa Mesa, CA on July 11th. Gordon and Paul have been attempting this ATV record breaking path for over 2 years. No one has ever tried ATV between Hawaii and California before.

Gordon West will be flying over to Hawaii this month to reconfigure ATV for the first two-way contact, and if conditions are anything like they were in July, add one additional record to the phenomenal California/Hawaii tunnel.

## "HAM FREQUENCIES ARE NOT PROTECTED..."

**Karl Kopetzky, K9AQJ** (a ham since November 1912!) sent me a photocopy of a portion of the administration's "*Budget Reconciliation Act*" ...signed into Public Law 103-66 a year ago (Aug. 10, 1993) by Pres. Clinton. Title VI, Part "B" deals with radio frequency allocations. One of the key administration fund-raising plans is to transfer spectrum from the government arsenal and then sell (auction) it to the highest bidder. Kopetzky (an attorney licensed to practice before the



Commission) takes issue with an ARRL statement in its reply comments and reported in our last issue. The League had pointed out that federal law requires the government to substitute alternative spectrum if it re-allocates government spectrum which is shared and needed by the amateur service. K9AQJ maintains that is not what the law states.

The Budget Reconciliation Act says the government shall "(C) seek to avoid - (iii) excessive disruption of existing use of Federal Government frequencies by amateur radio licensees." It also requires the government to "...consider the extent to which, in general, commercial users could share the frequency with amateur radio licensees..." The law also provides that alternate frequencies may be substituted if "(E) the reassignment will disrupt the existing use of a Federal band of frequencies by amateur radio licensees."

K9AQJ points out that "may" is not the same as "required, must, shall, or will..." And in no way is the FCC obligated to "Substitute other frequencies for proposed reallocation frequencies if reallocation will disrupt the existing use of federal bands by Amateur Radio." Kopetsky (at age 89!) also publishes the widely read "Voice of Ham Reason" newsletter."

## **RADIO FREE BERKLEY RESPONDS TO FCC FINE**

About a year ago, the FCC issued a fine against a Stephen P. Dunifer for his pirate (unlicensed) broadcasting as "Free Radio Berkeley." Dunifer believes "micro-broadcasting" (under 10 watt power) should be legal. His concerns have now been taken up by the San Francisco-based *National Lawyers Guild Committee on Democratic Communications*. His attorney, Louis N. Hiken, had a very lengthy and interesting response to the NAL..

He says that the \$20,000 fine is "grossly disproportionate" given Mr. Dunifer's income and assets and the nature of the alleged offenses. He concludes "The FCC policies upon which the forfeiture is based constitute prior restraint prohibited by the First Amendment, and are violative of Due Process and Equal Protection in that they discriminate against the poor and minorities, and do not provide for adequate representation of counsel or opportunity for a hearing or administrative review. The policies also exceed the FCC's constitutional authority, and are inconsistent with the FCC's established guidelines and function." He believes the NAL should be rescinded. Other points he made:

- FCC policies have failed to keep up with technological advances in the field of communication. The current regulatory scheme prohibits micro radio broadcasters and their listeners from accessing the public airwaves.
- This prohibition discriminates against minorities and the poor by denying equal opportunity for licensing and broadcasting to anyone who is financially unable to operate a full-power (100 watts or more) commercial radio station.
- Micro radio provides a format by which ordinary people

can communicate with one another over the airwaves without interfering with large-scale, commercial FCC licensed stations.

- The FCC has not provided procedures by which micro radio broadcasters can become licensed or authorized and is applying severe administrative and criminal sanctions aimed at precluding all such broadcasts.
- The FCC has failed to comply with its congressional mandate to regulate the airwaves in the public interest.
- The FCC is levying this fine without a hearing or opportunity to meet with the FCC, no explanation of how one might legally continue broadcasting, and without proper mandated consideration to the amount of the fine.
- The FCC must construct and enforce its regulatory framework in such a way as to safeguard the First Amendment right of free speech for all persons, regardless of their economic power.
- The FCC violates Due Process by selectively initiating forfeiture proceedings because of the political content and nature of the alleged broadcasts.
- Micro-radio broadcasters are perceived as a challenge to the FCC's regulatory authority, rather than an interference threat with licensed transmissions.
- The FCC prohibition of micro-radio broadcasting violates international rights of free opinion and expression.

The following article appeared in: *Morsum Magnificat*, No. 34, June 1994, page 2. This pro-Morse publication is edited by Geoff Arnold, G3GSR, in England.

**\*IARU Morse Committee** The International Amateur Radio Union has set up a Morse code ad hoc Committee. In response to a request for further information about this Committee, the following statement has been sent to *Morsum Magnificat* by Richard L. Baldwin W1RU, IARU President.

### **IARU COMMITTEE TO STUDY THE MANDATORY REQUIREMENT FOR MORSE COMPETENCY.**

In Article 32 of the Radio Regulations of the International Telecommunication Union appears Regulation 2735 which has a mandatory requirement for competency in Morse code operating to be shown before a radio amateur is permitted to operate on the HF bands - the "DX" bands below 30 MHz.

There are some groups of radio amateurs who from time to time query the necessity for this mandatory Morse code requirement. On the other hand, many radio amateurs - indeed possibly complete societies and even whole regions - continue to support the continuance of this provision.

As part of an ongoing review of the Amateur Service, the *Administrative Council of the International Amateur Radio Union* (IARU AC) has established a "**CW Ad-Hoc Committee**" to produce a report for consideration by the IARU AC at its meeting in Singapore in September 1994.

The Committee comprises: Fred Johnson, ZL2AMJ, a Director of IARU Region 3 as Chairman; Dr. John Allaway, G3FKM, Secretary IARU Region 1; and David Sumner, K1ZZ, from the IARU International Secretariat and the American Radio Relay League, as members. The Committee is thus drawn from the three IARU Regions

It is expected that after consideration by the IARU AC, the Report of the Committee may be made available to the IARU Regional organizations for further study and comment.



## KV4FZ's TELEPHONE FRAUD CONVICTION UPHELD

On July 22nd, controversial Herb Schoenbohm, KV4FZ, of the U.S. Virgin Islands had the appeal of his fraud conviction for illegally tapping into a long-distance telephone network turned down in federal court. KV4FZ had maintained that the court used evidence known to be false to convict him. A three judge panel for the United States Court of Appeals for the Third District affirmed the lower District Court decision.

Schoenbohm was charged with "knowingly and with intent to defraud" a telephone company by using "access devices" to obtain unauthorized telephone service. The "access devices" were unauthorized network access numbers that allowed free phone calls.

Court records said that between 1982 and 1989, Caribbean Automated Long Line Services ("CALLS") provided long-distance service to customers in the Virgin Islands. Fraud became a major problem for CALLS and they were eventually forced out of business. They blamed illegally-obtained access codes used to gain free access to their service as being the cause. The U.S. Secret Service later joined in the investigation.

On December 17, 1991, Schoenbohm was accused in a three-count indictment with possessing more than 15 counterfeit access devices to obtain unauthorized telephone service valued at more than \$1,000.

At the trial, the government introduced a two lists of calls, Exhibit 5A and 5B, which they concluded were made by Schoenbohm. Exhibit 5A were "calls known to be called by suspect," to various relatives and business associates using unauthorized access code numbers. Exhibit 5B was a longer list of calls which used the same access codes as were found in Exhibit 5A.

For example, a 1987 (Exhibit 5A) call known to have been made to one of Schoenbohm's relatives in Burton, Ohio was made using access code No. 149907. The government therefore concluded (in Exhibit 5B) that all calls made under that access code were made by KV4FZ.

A jury believed this assumption and convicted Schoenbohm on all three counts on April 14, 1992. Two of the counts, (using more than 15 access codes to obtain illegal telephone service valued at more than \$1,000) were later dropped. Count 1, using an illegal access device remained. Schoenbohm was sentenced to one month imprisonment and one month house confinement.

After the trial, Schoenbohm began his own investigation of some of the more than 600 calls that Exhibit 5B suggested he had made. It was not possible for him to do this before the trial since the list was not made available to him until the trial. By calling some of the numbers, KV4FZ was able to determine that he had never talked with those who answered. Furthermore, he found out that the Secret Service had also

called some of the listed numbers and had been told the same thing. Still, the government had entered the Exhibit 5B list of several hundred phone calls into the court record as evidence against him.

Schoenbohm demanded acquittal - or at least a new trial - since he said the Secret Service knew and failed to disclose that some of the corroborating evidence they used against him was known by them to be false. Both requests were denied. The presiding judge ruled that the evidence presented could sustain conviction on Count 1, using an illegal access device.

The court did, however, grant a *Motion for Correction of Sentence*. KV4FZ was re-sentenced to two months of incarceration which was suspended and two months of house arrest. In effect, the one month jail time and one month home detention, became two months house arrest. Schoenbohm again filed a motion for dismissal and a new trial. And again it was denied. That set the stage for an appeal to the Third Circuit Court of Appeals.

At the appeal argued on April 18th, Schoenbohm contended that the government used false evidence to convict him. Exhibit 5B listed phone calls that KV4FZ said he never made. The government had inferred that he had made the phone calls even though their witness knew this testimony could not be substantiated or had been denied by people KV4FZ supposedly called.

Writing the majority opinion, Circuit Appeal Judge Stapleton concluded that Exhibit 5B did not affect the judgement of the jury on Count 1, use of a counterfeit access device. Exhibit 5B was used to prove count 2, obtaining long distance services valued at more than \$1,000 on which the district judge had already granted a judgment of acquittal. "Count 1 ...did not require the government to prove that the fraudulently obtained services had a particular value. [Count 1] was violated if Schoenbohm made a single call using a counterfeit access device" Judge Stapleton wrote in his opinion. The calls made in Exhibit 5A had been clearly established as being made by KV4FZ.

"A Secret Service agent testified that Schoenbohm admitted possessing access codes and asked to 'cut a deal' to avoid losing his job with the Virgin Islands Police Department. Another witness testified that he heard Schoenbohm broadcast on a ham radio how to obtain illicit access codes." The appeal court thus refused to overturn Schoenbohm's conviction.

The judge made it clear, however that they "...were disturbed both by the government's use of Exhibit 5B and by some of the arguments the government makes. . . Despite the government's mishandling of Exhibit 5B, however, we must affirm Schoenbohm's conviction on Count 1 because of the overwhelming evidence that supports it."